

2019 COMMUNITY RESILIENCE ESTIMATES

Quick Guide

Updated August 10, 2021

Small Area Estimates Program

Social, Economic, and Housing Statistics Division

U.S. Census Bureau, Department of Commerce

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Overview

Community resilience is the capacity of individuals and households within a community to absorb the external stresses of a disaster. The 2019 Community Resilience Estimates (CRE) are produced using information on individuals and households from the 2019 American Community Survey (ACS) and the Census Bureau’s Population Estimates Program (PEP).

Local planners, policy makers, public health officials, and community stakeholders can use the estimates as one tool to help assess the potential resiliency of communities and plan mitigation and recovery strategies. The CRE uses small area modeling techniques. These techniques are flexible and can easily be modified for a broad range of uses (hurricanes, tornadoes, floods, economic recovery etc.).

Data

The [ACS](#) is a nationally representative survey with data on the characteristics of the U.S. population. The sample is selected from all counties and county-equivalents and has a sample size of about 3.5 million housing units each year. It is the premier source for detailed population and housing information about our nation and the communities within it.

We also use auxiliary data from the [PEP](#), the Census Bureau Program that produces and publishes estimates of the population living at a given time within a geographic entity in the U.S. and Puerto Rico. We use population data from the PEP by tract, age group, race and ethnicity, and sex. Once the weighted estimates are tabulated, small area modeling techniques are utilized to create the estimates for the CRE.

Risk Factors

Resilience to a disaster is partly determined by the vulnerabilities within a community. To measure these vulnerabilities, and construct the community resilience estimates, we designed population estimates based on individual and household level risk factors. The risk factors are binary components that add up to 10 possible risks using data from ACS.

The specific ACS-defined measures we use are as follows:

Risk Factors (RF) for Households (HH) and Individuals (I)

- RF 1: Income-to-Poverty Ratio (IPR) < 130 percent (HH).
- RF 2: Single or zero caregiver household - only one or no individuals living in the household who are 18-64 (HH).
- RF 3: Unit-level crowding defined as > 0.75 persons per room (HH)
- RF 4: Communication barrier defined as either
 - Limited English-speaking households¹ (HH) or
 - No one in the household over the age of 16 with a high school diploma (HH)
- RF 5: No one in the household is employed full-time, year-round. The flag is not applied if all residents of the household are aged 65 years or older (HH).
- RF 6: Disability posing constraint to significant life activity
 - Persons who report having any one of the six disability types (I): hearing difficulty, vision difficulty, cognitive difficulty, ambulatory difficulty, self-care difficulty, and independent living difficulty.
- RF 7: No health insurance coverage (I)
- RF 8: Being aged 65 years or older (I)
- RF 9: Households without a vehicle (HH)
- RF 10: Households without broadband Internet access (HH)

It is important to note that risk factor four is not double flagged. For example, if a household is linguistically isolated and no one over the age of 16 has attained a high school diploma or more education, the people in that household are only flagged once.

The result is an index that produces aggregate-level (tract, county, and state) small area estimates: the CRE. The CRE provide an estimate for the number of people with a specific number of risks. In its current data file layout form, the estimates are categorized into three groups: zero risks, 1-2 risks, and three plus risks.

Differences with Experimental CRE

The prior version of the CRE was an experimental data product. Released in June 2020 the estimates utilized the 2018 ACS 1-year microdata, 2018 PEP data, and information from the National Health Interview Survey (NHIS). For this iteration of the CRE, the 2019 ACS 1-year microdata was used, the NHIS health factors were removed, two ACS risk factors were updated, and 2 risk factors were added. These decisions were made after discussing the data needs of various federal and state agencies, stakeholders, and partners.

¹ A “Limited English speaking household” is one in which no member 14 years old and over (1) speaks only English at home or (2) speaks a language other than English at home and speaks English “Very well.”

Further Information

Community Resilience Estimates Website

[<census.gov/programs-surveys/community-resilience-estimates.html>](https://census.gov/programs-surveys/community-resilience-estimates.html)

Community Resilience Estimates Technical Documentation

[<census.gov/programs-surveys/community-resilience-estimates/technical-documentation.html>](https://census.gov/programs-surveys/community-resilience-estimates/technical-documentation.html)

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